

AK

Notice of Allowability

Application No.

10/708,356

Examiner

Brij B. Shrivastav

Applicant(s)

HURD, RALPH E.

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to response dated May 10, 2005.
2. ☒ The allowed claim(s) is/are 1, 3-27, 29 and 30.
3. ☐ The drawings filed on 02 May 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>6.4.04 & 6.6.14.0</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney J. Mark Wilkinson on July 20, 2005.

Accordingly, **claims 2 and 28 are canceled**, and claims 1 and 25 read as follows:

Claim 1: A method of clinical imaging comprising:

exciting water-exchangeable spins in oxygen-bearable molecules in a region-of-interest (ROI) having a change in oxygen status;

irradiating the ROI with exchangeable resonances and wherein the exchangeable resonances are within a resonance in a proton spectrum of one of deoxy-hemoglobin and dexoy-myoglobin;

determining proton transfer within the ROI from exchangeable protons within water; and determining changes in oxygen levels across the ROI.

Claim 25: A system of oxygen content determination comprising:

means for exciting spins limited to targeted oxygen-carrier molecules;

means for determining a proton transfer from the targeted oxygen-carrier molecules to imageable molecules;

means for determining a concentration of at least one of deoxy-hemoglobin and deoxy-myoglobin in the ROI; and

means for determining oxygenation of the targeted oxygen-carrier molecules from a reconstructed image of the imageable molecules.

2. **Claim 3** depends on claim 1, and not on claim 2.
3. The pending claims in the application after Examiner's amendment are 1, 3-27 and 29-30, which are in allowable condition.

REASONS FOR ALLOWANCE

4. The following is an examiner's statement of reasons for allowance:

Claims 1, 3-9 are allowed, as the prior art of record does not teach or suggest a method of clinical imaging, including steps of detecting proton transfer within the ROI from exchangeable protons within water; and determining changes in oxygen levels across the ROI, in combination with the remaining limitations of the claims.

Claims 25-27, 29 and 30 are allowed, as the prior art of record does not teach or suggest a system of oxygen content determination, including means for determining oxygenation of the targeted oxygen-carrier molecules from a reconstructed image of the imageable molecules, in combination with the limitations of the remaining claims.

Claims 10-24 have been allowed, the reason(s) of allowance was provided in the Office action dated April 1, 2005.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

Art Unit: 2859

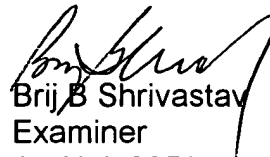
accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brij B. Shrivastav whose telephone number is 571-272-2250. The examiner can normally be reached on 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 20, 2005.


Brij B Shrivastav
Examiner
Art Unit 2859
